



Australian Government

Assessment Requirements for AURETU001 Install air conditioning systems

Release: 1

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Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- install an air conditioning system in two different vehicles or machinery.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to installing air conditioning systems, including procedures for:
 - working with refrigerants at boiling point given risk of frostbite
 - working with system lubricants, including carcinogenic oils
 - handling flammable refrigerants and refrigerant recovery equipment
 - selecting and using personal protective equipment (PPE)
 - identifying and using fire safety equipment
- environmental requirements, including procedures for preventing loss of refrigerant to the atmosphere.
- methods for locating manufacturer specifications and workplace procedures, including safe operating procedures and current Australian automotive code of practice
- requirements of Automotive code of practice: Control of refrigerant gases during manufacture, installation, servicing or de-commissioning of motor vehicle air conditioners
- principal types of vehicle air conditioning systems, including:
 - piston, scroll and rotary vane compressors
 - electric compressors
 - variable displacement compressors
 - clutchless compressors

- application, purpose and operation of air conditioning systems, including:
 - climate control
 - multi-zone systems
- refrigerant types, operating pressures and suitable lubricating oils
- techniques for reading and interpreting technical information, including:
 - refrigerant saturation temperatures in relation to ambient temperatures and changing levels of humidity
 - graphic symbols and diagrams
- procedures for using and operating tools and equipment, including:
 - hand tools
 - manifold and gauge sets
 - refrigerant hoses and couplers
 - recovery units and vacuum pumps
 - electronic leak detector
 - nitrogen cylinder and regulator
 - digital vacuum gauge (vacrometer)
 - oil injector
 - infra-red thermometer (pyrometer)
 - electronic temperature probe
 - electronic scales
 - valve core removal or replacement tool
 - humidity detector (psychrometer)
 - multimeter
- procedures for installing air conditioning systems and components, including:
 - techniques for reading and interpreting technical information, wiring diagrams and graphic symbols
 - methods of determining wiring and connection type and size for system
 - methods of determining placement of components on vehicle or machinery
 - methods of connecting system and components to existing electrical system without causing damage or problems, including:
 - selecting and soldering wires
 - selecting and crimping terminals
 - removing and replacing connectors
- post-installation testing procedures, including:
 - validating effectiveness of installation, including checking for:
 - electrical connector mating
 - ambient temperature
 - centre vent temperature
 - condenser and suction line temperature
 - manifold gauge pressure readings

- refrigerant leaks
- procedures for completing workplace documentation, including ARCTick sticker.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements and hold an Australian Refrigerant Council (ARC) Refrigerant Handling licence.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the air conditioning systems that they have installed in vehicles or machinery, e.g. work orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- vehicle and machinery wiring specifications relevant to system and components being installed
- manufacturer air conditioning system specifications
- Australian automotive code of practice: Control of refrigerant gases during manufacture, installation, servicing or de-commissioning of motor vehicle air conditioners.
- two different vehicles or machinery requiring installation of air conditioning systems
- material necessary to install air conditioning system components
- tools, equipment and materials appropriate for installing air conditioning system components, including:
 - manifold and gauge set
 - recovery unit
 - vacuum pump
 - electronic leak detector
 - nitrogen cylinder and regulator
 - digital vacuum gauge (vacrometer)
 - multimeter
 - electronic scales
 - oil injector
 - infra-red thermometer (pyrometer)
 - electronic temperature probe
 - valve core removal or replacement tool
 - humidity detector (psychrometer)
 - air conditioning gas appropriate to system being installed.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

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